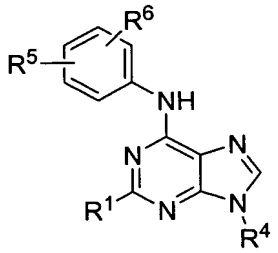
WHAT IS CLAIMED IS:

1. A compound of formula I:



wherein:

R^1 is a member selected from the group consisting of hydrogen, halogen and -L-R^2;

L is a member selected from the group consisting of -O- and -NR^3-, wherein R^3 is H, or R^3 is optionally taken together with R^2 and the nitrogen to which both are attached to form a heterocycle, optionally substituted with C_{1-4}alkyl;

R^2 is a member selected from the group consisting of C_{1-4}alkyl, C_{3-8}cycloalkyl and C_{0-2}alkylaryl, substituted with 0-2 R^{2a} groups that are independently selected from the group consisting of halogen, C_{1-4}alkyl, C_{1-4}alkoxy, -N(R^{2b}, R^{2b}), -SO_2N(R^{2b}, R^{2b}), -C(O)N(R^{2b}, R^{2b}) and -O-aryl, or when said R^{2a} groups are on adjacent ring atoms they are optionally taken together to form a member selected from the group consisting of -O-$(CH_2)_{1-2}$-O-, -O-$C(CH_3)_2CH_2$- and -$(CH_2)_{3-4}$-;

each R^{2b} group is a member that is independently selected from the group consisting of hydrogen and C_{1-4}alkyl;

R^4 is a member selected from the group consisting of C_{1-4}alkyl, C_{3-8}cycloalkyl, C_{1-4}alkylhydroxy, C_{0-2}alkylaryl, substituted with 0-2 R^{4a} groups, and C_{0-2}alkylheterocycle, optionally substituted with C_{1-4}alkyl;

each R^{4a} group is a member independently selected from the group consisting of hydrogen, halogen, C_{1-4}alkyl, C_{1-4}alkoxy, and aryl, or when said R^{4a} groups are on adjacent ring atoms they are optionally taken together to form -O-$(CH_2)_{1-2}$-O-;

R^5 is hydrogen and R^6 is a member independently selected from the group consisting of halogen, C_{1-4}alkyl, -C(O)-C_{1-4}alkyl, -SO_2-N(R^{2b}, R^{2b}), C_{1-4}alkylhalo, -O-aryl and -N(R^7, R^8), or when R^5 and R^6 are on adjacent ring atoms they are optionally taken together to form -O-$(CH_2)_{1-2}$-O-;

R^7 is a member selected from the group consisting of hydrogen, C_{1-4}alkyl, C_{1-4}alkylhydroxy, aryl and -C(O)R^{7a};

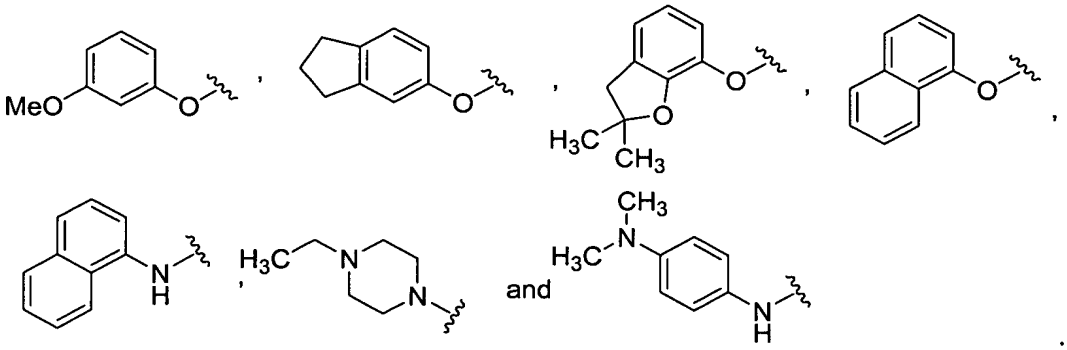
R^{7a} is a member selected from the group consisting of C_{1-4}alkyl, C_{1-4}alkylhalo, C_{3-8}cycloalkyl and aryl;

R^8 is a member selected from the group consisting of H and C_{1-4}alkyl, or R^7 and R^8 are optionally taken together with the nitrogen to which they are attached to form a heterocycle, optionally substituted with C_{1-4}alkyl; and

all pharmaceutically acceptable salts and hydrates thereof.

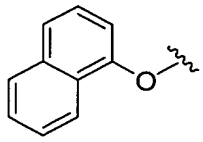
2. A compound of claim 1, wherein:

R^1 is a member selected from the group consisting of:



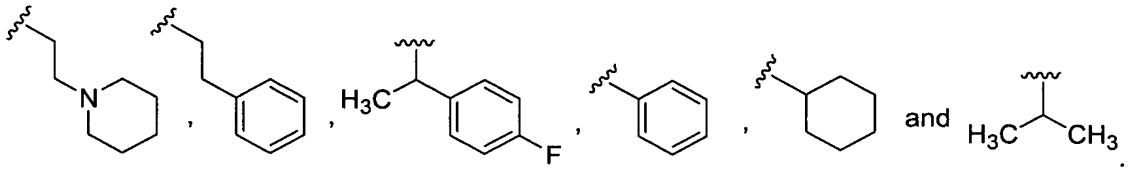
3. A compound of claim 1, wherein:

R^1 is



4. A compound of claim 1, wherein:

R^4 is a member selected from the group consisting of:



5. A compound of claim 1, wherein:

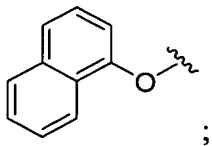
R^4 is cyclohexyl.

6. A compound of claim 1, wherein:

R^5 is H and R^6 is morpholine.

7. A compound of claim 1, wherein:

R^1 is



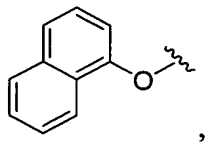
;

R^5 is H; and

R^6 is morpholine.

8. A compound of claim 1, wherein:

R^1 is

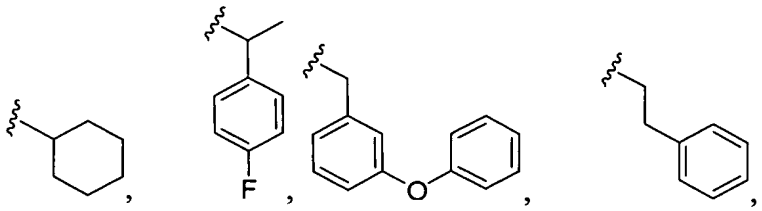


,

R^5 is H;

R^6 is morpholine; and

R^4 is a member selected from the group consisting of:



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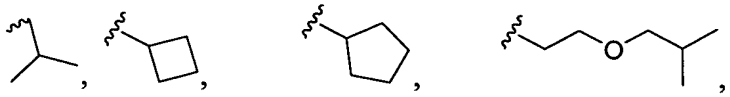

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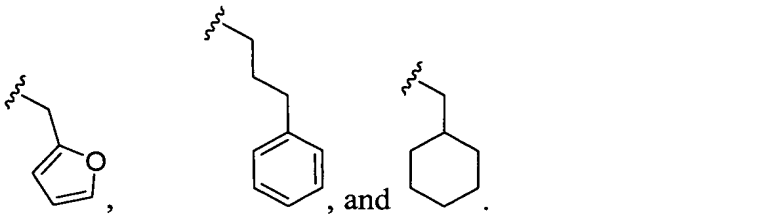
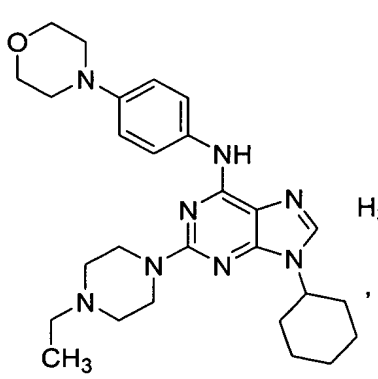


, and .

9. A compound of claim 1, wherein the compound is a member selected from the group consisting of: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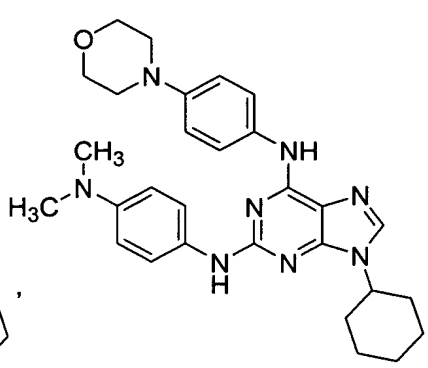
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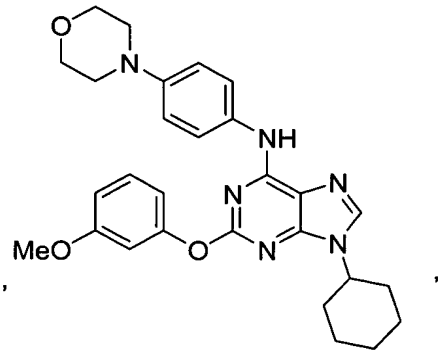
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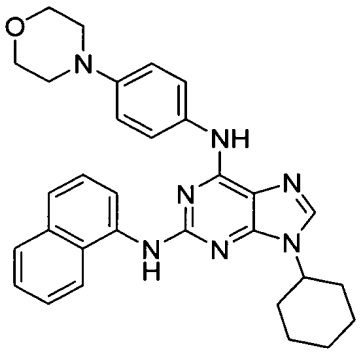
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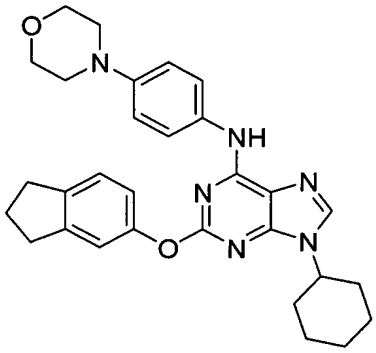
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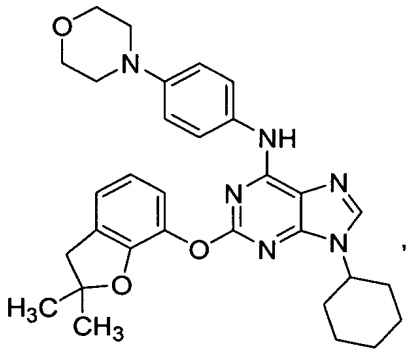
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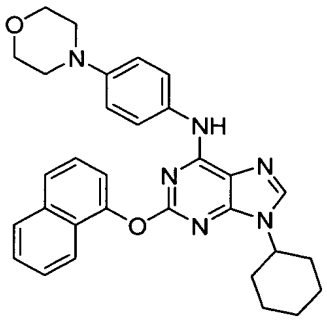
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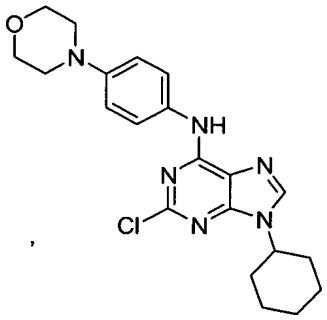
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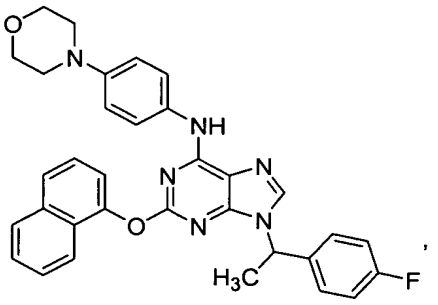
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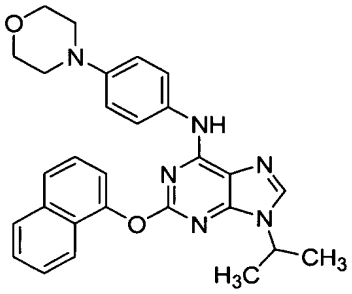
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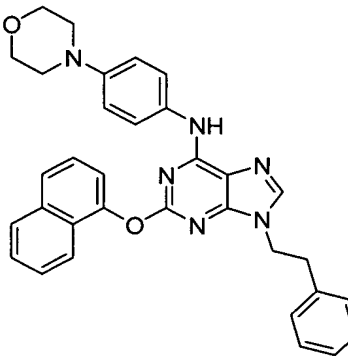
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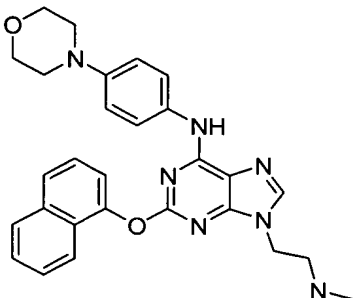
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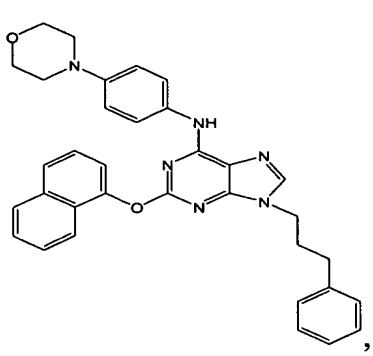
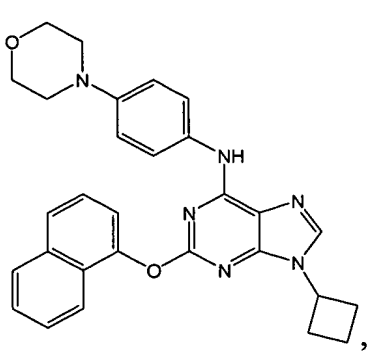
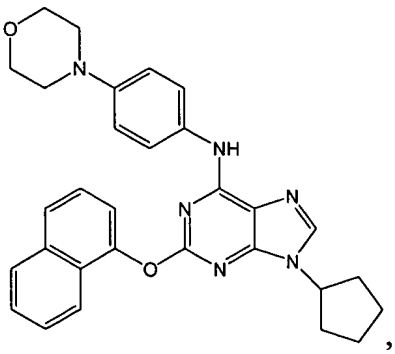

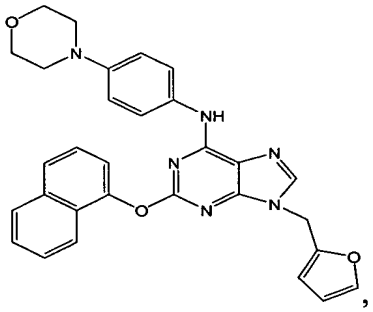
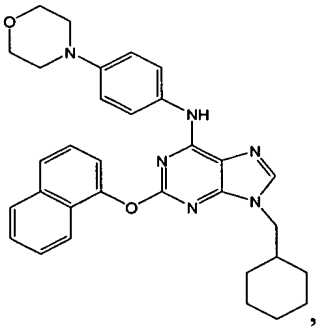
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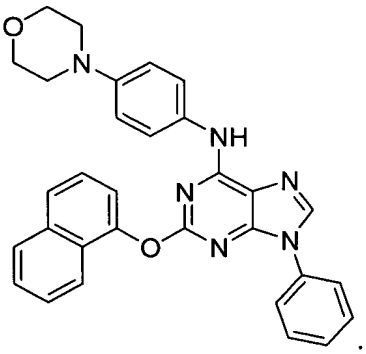
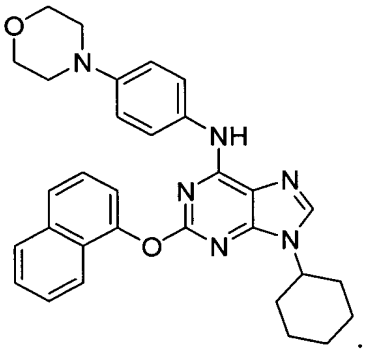


10. A compound of claim 1, wherein the compound is:



11. A pharmaceutical composition comprising a compound of claim 1 and a pharmaceutically acceptable carrier.

12. A method of inducing osteogenesis, the method comprising:

contacting a mammalian cell with a compound of claim 1, whereby the mammalian cell differentiates into a cell of an osteoblast lineage.

13. The method of claim 12, wherein said compound of claim 1 is in a pharmaceutically acceptable carrier.

14. The method of claim 12, wherein the mammalian cell is in a mammal.

15. The method of claim 14, wherein the step of contacting is by oral administration of the compound to the mammal.

16. The method of claim 14, wherein the step of contacting is by intravenous administration of the compound to the mammal.

17. The method of claim 14, wherein the step of contacting is by subcutaneous administration of the compound to the mammal.

18. The method of claim 14, wherein the step of contacting is by intraperitoneal administration of the compound to the mammal.

19. The method of claim 12, further comprising detecting differentiation of the mammalian cell into a cell of an osteoblast lineage.

20. The method of claim 19, whereby differentiation of the mammalian cell into a cell of an osteoblast lineage is detected by detecting expression of an osteogenesis marker gene.

21. The method of claim 20, wherein the osteogenesis marker gene is a gene selected from the group consisting of alkaline phosphatase, collagen type I, osteocalcin, and osteoponin.

22. The method of claim 19, whereby differentiation of the mammalian cell into a cell of an osteoblast lineage is detected by detecting expression of a bone specific transcription factor.

23. The method of claim 22, wherein the bone specific transcription factor is Cbfa1/Runx2.

24. The method of claim 12, wherein the mammalian cell is a stem cell.

25. The method of claim 24, wherein the stem cell is a mesenchymal stem cell.

26. The method of claim 25, wherein the mesenchymal stem cell is isolated from a mouse.

27. The method of claim 26, wherein the mesenchymal stem cell is murine embryonic mesoderm fibroblast cell.

28. The method of claim 25, wherein the mesenchymal stem cell is isolated from a primate.

29. The method of claim 28, wherein the primate is a human.

30. The method of claim 12, wherein the mammalian cell is further contacted with bone morphogenetic protein 4 (BMP-4).

31. The method of claim 30, wherein the mammalian cell is a pre-adipocyte cell.

32. The method of claim 30, wherein the mammalian cell is a myoblast cell.

33. The method of claim 12, wherein the mammalian cell is attached to a solid support.

34. The method of claim 33, wherein the solid support is a three dimensional matrix.

35. The method of claim 33, wherein the solid support is a planar surface.

36. A method of inducing osteogenesis, the method comprising:

contacting a mammalian cell with a compound of claim 10, whereby the mammalian cell differentiates into a cell of an osteoblast lineage.

37. The method of claim 36, wherein the mammalian cell is in a mammal.

38. The method of claim 36, wherein the step of contacting is by oral administration of the compound to the mammal.

39. The method of claim 36, wherein the step of contacting is by intravenous administration of the compound to the mammal.

40. The method of claim 36, wherein the step of contacting is by subcutaneous administration of the compound to the mammal.

41. The method of claim 36, wherein the step of contacting is by intraperitoneal administration of the compound to the mammal.

42. A method of treating a bone disorder, the method comprising:

contacting a mammalian cell with a compound of claim 1, whereby the mammalian cell differentiates into a cell of an osteoblast lineage.

43. The method of claim 42, wherein the bone disorder is associated with defective osteoblasts.

44. The method of claim 43, wherein the bone disorder is osteoporosis.

45. The method of claim 42, further comprising administering the cell of an osteoblast lineage to an individual with the disorder, thereby treating the disorder.

46. The method of claim 45, wherein the administration is by surgical implantation.